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Acting Deputy Secretary

Original via UPS -- Copy via Electronic Mail

November 20, 2018

Mr. Charles Maguire, Director
Water Quality Protection Division (6WQ)
U. S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: State Certification

Dear Mr. Maguire:

Enclosed, please find the state certification for the following proposed National Pollutant Discharge Elimination System (NPDES) permit:

Los Ojos State Fish Hatchery– NM0030139

If any, comments and conditions are enclosed on separate sheets.

U.S. Environmental Protection Agency (USEPA) proposes to regulate discharges under the above-referenced NPDES Individual Permit. A state Water Quality Certification is required by the federal Clean Water Act (CWA) §401 to ensure that the action is consistent with state law (New Mexico Water Quality Act, sections 74-6-1 through 74-6-17, New Mexico Statutes Annotated (NMSA) 1978) and complies with state Water Quality Standards [*State of New Mexico, Standards for Interstate & Intrastate Surface Waters, New Mexico Water Quality Control Commission, 20.6.4 New Mexico Administrative Code (NMAC)*], the Water Quality Management Plan/Continuing Planning Process, including Total Maximum Daily Loads (TMDLs), and the Antidegradation Policy.

Pursuant to State regulations for permit certification (Section 20.6.2.2001 NMAC), USEPA jointly with NMED issued a public notice of the draft permit and announced a public comment period posted on the NMED web September 29, 2018. The public comment period ended on October 29, 2018. NMED received comments from New Mexico Game and Fish, which were considered in this certification.

Sincerely,

/s/Shelly Lemon

Shelly Lemon, Bureau Chief
Surface Water Quality Bureau

cc: (w/enclosures)

Ms. Evelyn Rosborough, USEPA (6WQ-NP) via e-mail
Mr. Quang Nguyen, USEPA (6WQ-PP) via e-mail
Mr. Brent Larsen, USEPA (6WQ-PP) via e-mail
Mr. Kirk Patten, Los Ojos State Fish Hatchery via e-mail

Ms. Anne Idsal, Regional Administrator
Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202-2733

November 20, 2018

STATE CERTIFICATION

RE: Los Ojos State Fish Hatchery – NPDES Permit No. NM0030139

Dear Ms. Idsal:

The New Mexico Environment Department has examined the proposed NPDES permit above. The following conditions are necessary to assure compliance with the applicable provisions of the Clean Water Act Sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law. Compliance with the terms and conditions of the permit and this certification will provide reasonable assurance that the permitted activities will be conducted in a manner which will not violate applicable water quality standards and the water quality management plan and will be in compliance with the antidegradation policy.

The State of New Mexico

( ) certifies that the discharge will comply with the applicable provisions of Sections 208(e), 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of State law

(X) certifies that the discharge will comply with the applicable provisions of Sections 208(e), 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of State law upon inclusion of the following conditions in the permit (see attachments)

( ) denies certification for the reasons stated in the attachment

( ) waives its right to certify

In order to meet the requirements of State law, including water quality standards and appropriate basin plan as may be amended by the water quality management plan, each of the conditions cited in the draft permit and the State certification shall not be made less stringent.

The Department reserves the right to amend or revoke this certification if such action is necessary to ensure compliance with the State's water quality standards and water quality management plan.

Please contact Sarah Holcomb at (505) 827-2798, if you have any questions concerning this certification. Comments and conditions pertaining to this draft permit are attached.

Sincerely,

/s/Shelly Lemon

Shelly Lemon
Bureau Chief
Surface Water Quality Bureau

Los Ojos State Fish Hatchery
State Certification of the Proposed NPDES Permit
NM0030139
November 20, 2018

The following revisions are necessary to ensure that discharges allowed under the National Pollutant Discharge Elimination System (NPDES) permit protect State of New Mexico water quality standards (WQS) adopted in accordance with §303 of the Clean Water Act (CWA) and the New Mexico Water Quality Act [NMSA 1978, §§ 74-6-1 to -17]. State of New Mexico (State) WQS are published in the document entitled *Standards for Interstate and Intrastate Surface Waters*, New Mexico Water Quality Control Commission (WQCC), 20.6.4 New Mexico Administrative Code (NMAC) as amended by the WQCC and approved by the United States Environmental Protection Agency (EPA or USEPA) through August 11, 2017.

NPDES regulations at 40 CFR 122.44(d)(l)(i) require that permit *limitations must control all pollutants or pollutant parameters... which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard…*

The State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process (approved by USEPA on December 23, 2011) states:

Pursuant to 40 CFR 130.12(a), NPDES permits must be consistent with the WQMP. Each NPDES permit issued must contain requirements necessary to achieve water quality standards [40 CFR 122.4(d)]. Therefore where a WLA has been assigned through the TMDL process, the WLA must be incorporated into the permit as specific effluent limitations… In the case of a revised permit for which there is already an existing WLA but there has been a change to the design flow, the revised permit will include the existing WLA in addition to the calculation using the TMDL target concentration and the increase in design flow.

Furthermore, EPA's 1991 *Guidance for Water Quality-based Decisions: The TMDL Process* (EPA-440-4-91-001), discusses the use of phased TMDLs for situations where available data only allow for "estimates" of necessary load reductions or for "non-traditional problems" where predictive tools may not be adequate to characterize the problem with a sufficient level of certainty. It goes on to explain that such significant uncertainty may arise, for example, because the State is using a surrogate to interpret a narrative standard. A phased approach provides for the implementation of interim load reduction strategies while recognizing the need for additional monitoring data to more accurately characterize sources and loadings.

Conditions of Certification:

Condition #1:

Background and Discussion for Condition #1:

The 2011 US EPA – approved Total Maximum Daily Load (TMDL) for *E. coli* in the Rio Chama Watershed provided a waste load allocation (WLA) for NM0030139 Los Ojos Fish Hatchery of 1.35 x 10^{10} CFU/day based on the 24-month highest discharge for the hatchery. Per the language in Section IV-2 in the WQMP, the discharge is at or less than the in-stream TMDL target concentration and therefore there is sufficient room in the current TMDL to allow for the increased discharge of the Los Ojos Fish Hatchery. In the case of a revised permit for which there is already an existing WLA but there has been a change to the design flow, the revised permit will include a revised calculation using the TMDL target concentration and the increase in design flow.

The draft permit contains a loading limitation for *E. coli* of 18.03 lbs/day, along with concentration limits of 126 cfu/100mL daily average and 235 cfu/100 mL daily maximum.

SWQB used the new design flow of the Los Ojos State Fish Hatchery of 3.7761 mgd to provide a new WLA using the following calculation:

Previous WLA calculation: (2.82 mgd)(126 cfu/100mL)($3.79x10^7$) = 1.35×10^{10} cfu/day
Current WLA calculation: (3.7761 mgd)(126 cfu/100mL)($3.79x10^7$) = 1.803×10^{10} cfu/day.

Condition #1:

The *E.coli* loading limit in the final permit shall be a daily maximum load of **1.803 x 10^{10} cfu/day** not lbs/day.

Condition #2:

Background and Discussion for Condition #2:

40 CFR §122.44(d)(ii) states:
When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

40 CFR §122.44(d)(v) states:
Except as provided in this subparagraph, when the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, toxicity testing data, or other information, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, the permit must contain effluent limits for whole effluent toxicity. Limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d)(1)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.

40 CFR §122.44(d)(vii)(B) states:
Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

NMED's Water Quality Management Plan/Continuing Planning Process states in Part IV (Total Maximum Daily Loads):
In the case of a revised permit for which there is already an existing WLA but there has been a change to the design flow, the revised permit will include the existing WLA in addition to the calculation using the TMDL target concentration and the increase in design flow.

NMED's August 16, 2011 EPA approved TMDL for the Rio Chama Watershed (Abiquiu Reservoir to Headwaters) states:
NMED believes that a TMDL should be written to targets that are protective of the stream and scientifically defensible however there should also be recognition of the limits of technology for nutrient removal…After implementation of the Phase 1 effluent limits based on this TMDL and given enough time to allow the aquatic system to respond, NMED will reevaluate the conditions in the Rio Chama and Rio Chamita. At that time, if the waterbodies are still impaired for plant nutrients and there is no substantial

improvement observed in the water quality of these waters, the facilities would be required to enhance the treatment of the effluent by adding more effective treatment or find other means of disposal (Figure 4.1; Tables 4.9 and 4.10).

A phased strategy is an iterative process and will require future data collection and analysis to determine if the load reductions achieved using effluent limits that are based on alternative target concentrations actually lead to attainment of water quality standards.

20.6.4.13(F) NMAC states:
Plant nutrients: *Plant nutrients from other than natural causes shall not be present in concentrations that will produce undesirable aquatic life or result in a dominance of nuisance species in surface waters of the state.*

For total nitrogen and total phosphorus, the previous permit contained a compliance schedule for the hatchery that specified attainment of Phase 1 Waste Load Allocation requirements/effluent limitations in the August 16, 2011 nutrient TMDL for the Rio Chama Watershed by 30 months after the previous permit effective date of November 1, 2013. Additionally, the compliance schedule also specified that Phase n limitations out of the TMDL would be attained by 9 years and 6 months after the previous permit's effective date, resulting in a final compliance date of May 1, 2023.

However, the TMDL is using a surrogate (i.e., nutrient thresholds) to interpret a narrative standard which includes substantial uncertainty. EPA's 1991 Guidance discusses the use of phased TMDLs for situations where available data only allow for estimates of necessary load reductions where predictive tools may not be adequate to characterize the problem with a sufficient level of certainty. The TMDL provides a phased approach to implement interim load reduction strategies to account for this uncertainty, while also recognizing the need for additional monitoring data to more accurately characterize sources and loadings.

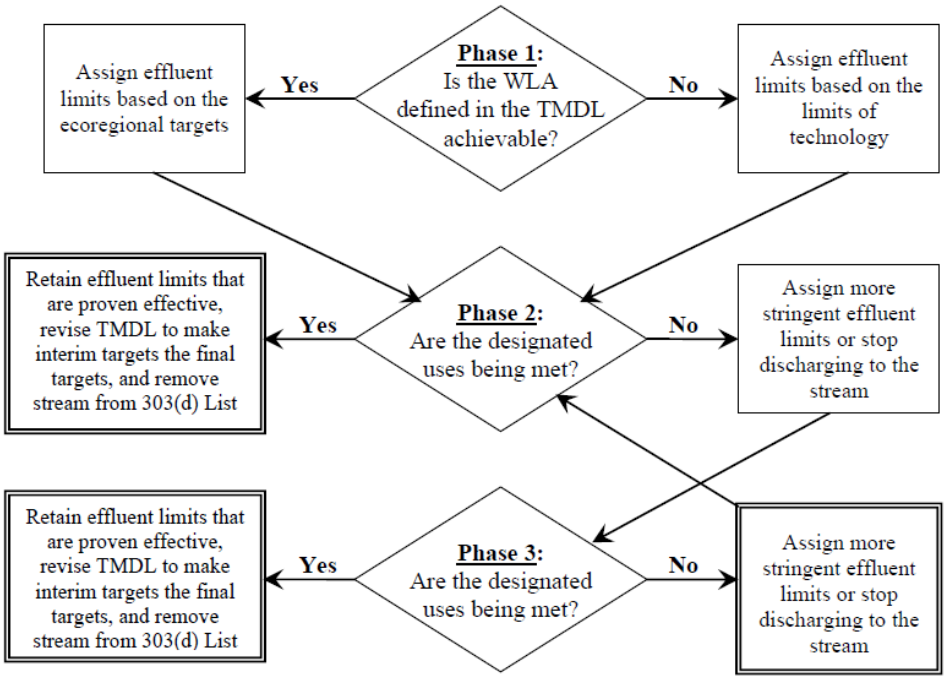

Figure 4.1 Decision process for assigning effluent limits in a phased TMDL

The limitations for total nitrogen and total phosphorus that were incorporated into the previous permit were taken directly from the waste load allocation expressed in the TMDL. The Phase 1 WLA expressed in the TMDL for Total Nitrogen (TN) is an annual average of the limits of technology (literature value based on wastewater treatment plants) and the Phase 1 WLA expressed in the TMDL for Total

Phosphorus (TP) is an allocation of 85% of the TMDL to the WLA. The Phase n limits are based on the nutrient threshold concentrations that are used as surrogates to interpret the narrative nutrient standard.

The WLA expressed in the phased TMDL for Los Ojos State Fish Hatchery are as follows:

Phase	Facility	Parameter	Discharge (mgd)	Effluent Limit (mg/L)	Conversion Factor	Wasteload Allocation (lbs/day)
1st	Los Ojos State Fish Hatchery	Total Phosphorus	2.82	0.24	8.34	5.66
		Total Nitrogen	2.82	3.0	8.34	70.6
Nth	Los Ojos State Fish Hatchery	Total Phosphorus	2.82	0.07	8.34	1.65
		Total Nitrogen	2.82	0.25	8.34	5.88

EPA's Technical Support Document for Water Quality Based Toxics Control (TSD) (EPA-505-2-90-001) states that *Direct use of a WLA as a permit limit creates a significant risk that the WLA will be enforced incorrectly, since effluent variability and the probability basis for the limit are not considered specifically*. Conservative assumptions from the TMDL include treating nitrogen and phosphorus as pollutants that do not degrade or change over time (i.e., assuming the discharge is steady-state). NMED believes that the WLA expressed in the TMDL should have been interpreted into permit limitations that adequately account for effluent variability as calculated below.

The facility's flow (highest annual average over the past two years) increased from 2.82 million gallons per day (mgd) to 3.7761 mgd, and as allowed in the *State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process* (EPA approved on December 23, 2011) at part IV.B.1, "In the case of a revised permit for which there is already an existing WLA but there has been a change to the design flow, the revised permit will include the existing WLA in addition to the calculation using the TMDL target concentration and the increase in design flow", NMED accounted for this increase under the TMDL as documented below.

In order to adequately account for effluent variability, NMED used the TSD to derive corrected "Phase 1" permit limitations while also incorporating the new design flow of the facility by using long-term averages (LTA) of the Los Ojos Fish Hatchery composite discharge dataset from April 2016 - April 2017. The long-term average used for TN was 1.381 mg/L and the long-term average for TP was 0.215 mg/L, both of which are lower than the Phase 1 concentration effluent limits noted above. Following Table 5-2 in the TSD, NMED assumed that the nutrient dataset was lognormally distributed with a coefficient of variation of 0.6, the maximum daily limit (MDL) and average monthly limit (AML) were set at the 95th percentile, and the sampling frequency for nutrients was set at once per month, per the permittee's request.

This gives the following corrected "Phase 1" effluent limitations (accounting for the increase in design flow per the WQMP/CPP):

	AML	MDL
Total Phosphorus	0.46 mg/L	0.46 mg/L
Total Nitrogen	2.94 mg/L	2.94 mg/L

Additionally, because of the facility's flow increase, NMED conducted an antidegradation analysis to determine whether the discharge would be a *de minimus* discharge, or would require a full Tier 2 review. According to the antidegradation analysis, the concentration limitation discussed below for total nitrogen and total phosphorus are considered to be *de minimus*. The antidegradation analysis spreadsheets are attached to this certification.

NMED further used the antidegradation analysis to refine the total phosphorus and total nitrogen limitations beyond the TSD's interpretation from WLA to permit limitations. The total phosphorus limit is based on NMED's antidegradation analysis for a *de minimus* discharge, and results in capping the effluent concentration limit at 0.40 mg/L.

NMED's WQMP/CPP states that the permitting authority will "review effluent discharge data to ensure that NPDES permits are protective of water quality standards." Consistent with the WQMP/CPP, the level of water quality necessary to protect existing uses must be maintained and protected. Furthermore, where a surface water is impaired, there shall be no further degradation or lowering of the water quality with respect to the pollutant causing the impairment. The total nitrogen target concentration listed in the TMDL is 3.0 mg/L. The total nitrogen long-term average concentration translated via the TSD method results in a concentration limit of 2.94 mg/L. However, to encourage progress toward meeting water quality standards, NMED presents a total nitrogen limit that is based on an analysis of the long term average of the effluent data gathered from ECHO, which shows that 1.9 mg/L is the maximum daily average observed over the past 3 years. 59.84 lbs/day is the maximum daily average loading value tied to the nitrogen concentration (max concentration times the new design flow). TSS and E. coli were *de minimus* discharges and were not included in the table below. Compliance with the WLA adjustment discussed in Condition #1 for *E. coli* is appropriate.

Limitations based on antidegradation analysis:

	Limitation in previous permit (direct implementation of TMDL WLA)	Previous Permit Limitation with design flow modification	Translated Phase 1 Permit Limitation (via EPA's TSD)	Result of Antidegradation Analysis
Total Phosphorus (concentration)	0.24 mg/L (AML and MDL)	0.24 mg/L	0.46 mg/L (AML and MDL)	0.40 mg/L
Total Phosphorus (loading)	5.66 lbs/day	7.56 lbs/day	14.49 lbs/day	12.59 lbs/day
Total Nitrogen (concentration)	3.0 mg/L	3.0 mg/L	2.94 mg/L	1.9 mg/L
Total Nitrogen (loading)	70.6 lbs/day	94.48 lbs/day	92.14 lbs/day	59.84 lbs/day

Condition #2:

NMED requires that Table 1 in Part I, Section A is updated to provide clear and concise instruction to the permittee for compliance purposes. The following language is suggested:

Pollutant	**Monthly Avg (lbs/day)**	**Daily Max (lbs/day)**	**Monthly Avg (mg/L)**	**Daily Max (mg/L)**	**Frequency**	**Type**
Nitrogen, Total (Phase 1) *	59.84	Report	1.9	Report	1x/month	Grab
Phosphorus, Total (Phase 1) *	12.59	Report	0.40	Report	1x/month	Grab

Additionally, the draft permit displays the Phase n effluent limitations in Table 1 such that it appears the Phase n limits are effective immediately. NMED also requires that the Phase n limitations are delayed in permit implementation to account for uncertainty in the narrative standard translation and allow for

additional data collection to more accurately characterize sources and loadings. Figure 4.1 from the TMDL describes the process intended to address nutrient pollution issues. NMED advocates using the WQBELs calculated above as updated Phase 1 limits, which are more stringent than the current permit. NMED will be in the Rio Chama watershed for monitoring purposes in 2021-2022 and will be able to re-assess the Rio Chama for attainment of the standards at that time. If still impaired, NMED expects that the loading capacity and allocation scheme will be revised using the additional information and data from the survey.

NMED additionally requires that a Pollutant Minimization Plan (PMP) is implemented to require the facility to document and mitigate sources of nutrients that may be added from facility operations while evaluating the potential to meet the phase n limitations described in the TMDL. A PMP is intended to improve effluent quality and ensure reasonable progress toward attainment of the water quality standard and reduce any adverse impacts of the discharge on receiving waters.

A Pollutant Minimization Plan should include the following components:

- Identify sources of nitrogen and phosphorus that can enter into the system
- Once identified, class sources of the pollutant into categories based on available technologies to reduce the contribution of nutrients
- Apply control strategies where possible to address nutrient sources
- Document source control strategies, and outcomes.
- Maintain the gains in effluent quality.

Once implemented, the permittee shall submit an annual report to EPA and NMED, citing the PMP work that has been accomplished during the permit term including descriptions of control strategies employed, maintenance work conducted (if applicable) and any further evaluations to improve effluent quality. The last annual report will be due to EPA and NMED on May 1, 2023, and the information from the PMP will be evaluated in accordance with the next permit's issuance.

Comments that are not Conditions of Certification:

1. In the permit replace the PART III-Standard Conditions for NPDES Permits amended March 2013 with the new PART III-Standard Conditions for NPDES Permits amended September 2017.

2. The 2011 TMDL states that NMED-SWQB recommends that the effluent be monitored for bacteria twice a month. Nutrient limits include both maximum and average, if only one sample a month is taken, the permittee would be calculating the Daily Average with only one sample. SWQB believes a sampling frequency of once per month is adequate as discussed in Condition #2 above. This is an increase in sampling frequency from the previous permit, which was set at once per quarter.

3. NMED suggests an update to the outfall description in Part I.A.1 of the permit to the following:

   During the period beginning on the effective date of the permit and lasting through the expiration date of the permit (unless otherwise noted), the permittee is authorized to discharge treated wastewater from Outfall 002, which is to the La Puente Ditch, thence to irrigation or partially to the Laguna del Campo, thence to the Rio Chama in 20.6.4.119 of the Rio Grande Basin. The permittee is also authorized to discharge from Outfall 001 during an emergency. Outfall 001 flows to an unnamed ditch, thence to Upper Laguna del Campo, thence to Laguna del Campo, thence to La Puente Ditch (where it may be used for irrigation) or sent to the Rio Chama. Discharges from either outfall shall be measured and limited as specified below: